

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
S P E C I F I C A T I O N

NAIL CLIPPERS WITH FINGER ILLUMINATOR

CROSS-REFERENCE TO RELATED APPLICATIONS

Applicant has filed a provisional application on September 17, 2002, application No. 60/411,471.

BACKGROUND OF THE INVENTION

The field of the invention is nail clippers and the invention relates more particularly to an improvement to nail clippers which utilizes a source of light to illuminate the interior of the tip of a subject's finger. A problem exists especially with the cutting of an infant's or toddler's finger nails. The infant or toddler tends to pull away and move in such a way that it is very difficult to accomplish a nail clipping operation. It has been recommended that an infant's or toddler's nails be clipped while the infant or toddler is sleeping. The main difficulties in this approach is that it is typically dark when the infant is sleeping and turning on a light wakes the child.

Even in a brightly illuminated area, the intersection between the portion of the nail which extends beyond the

1 subject's finger and that which is still part of the subject's
2 finger is sometimes difficult to see. Several attempts have been
3 made to illuminate the area of the cutting end of a nail end of a
4 nail clipper. One such device is shown in U.S. Patent No.
5 6,553,592, where a pair of LEDs is held outwardly from the end of
6 the nail clipper to illuminate a target place. Another patent
7 showing a light to illuminate the cutting area is U.S. Patent No.
8 6,220,251. This device also has a magnifying glass and the light
9 is provided by LED 34. The light and the magnifying glass assist
10 in the viewing of the nail clipping area whether it be for a pet
11 or a human.

12 By placing the light at a significant distance from the
13 finger nail, the result is the illumination of the exterior
14 surface of the finger tip and nail. Such lighting does not
15 emphasize the line between the finger nail over the finger and
16 the extending part of the finger nail.

17 BRIEF SUMMARY OF THE INVENTION

18 The present invention is for a nail clipping assembly
19 including a pair of nail clippers. A light source is held near
20 the upper and lower blades of the nail clippers and positioned so
21 that when a finger is moved so that the nail to be cut is between
22 the blades of the nail cutter, the light source will illuminate

1 the interior of the finger under its nail so that an intersection
2 between the extending portion of the nail and the finger is
3 clearly visible. Preferably, the pair of nail clippers is held
4 in a holder which has a recess for supporting the nail clippers
5 and which also holds batteries and a light bulb or LED.
6 Preferably, the holder has a finger nail guide extending just
7 below the upper blade of the nail clippers. In this way, a
8 subject's finger nail can be raised upwardly until it contacts
9 the finger nail guides and then moved forwardly into the space
10 between the cutting blades of the nail clippers. The present
11 invention also includes the ergonomic handle for holding the nail
12 clippers so that the nail clippers can be supported by the user's
13 palm and fingers instead of just between the fingers, as is done
14 for conventional nail clippers.

15 BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

16 Figure 1 is a perspective view showing the top, front and
17 left side of the nail clipping assembly of the present invention.

18 Figure 2 is a left side view thereof partially cut away.

19 Figure 3 is a perspective view showing a user cutting a
20 subject's fingernail.

21 Figure 4 is a front view thereof.

1 Figure 5 is a side view of a finger and finger nail together
2 with a light bulb of the nail clipping assembly of the present
3 invention.

4 Figure 5A is a side view of a subject's finger and a light
5 source.

6 Figure 5B is a side view of a subject's finger and a light
7 source.

8 Figure 6 is a top view of Figure 5.

9 Figure 7 is a cross-sectional view of an alternate
10 embodiment of the nail clipping assembly of Figure 1.

11 DETAILED DESCRIPTION OF THE INVENTION

12 A nail clipping assembly 10 is shown in perspective view in
13 Figure 1. Assembly 10 holds conventional nail clippers 11 in a
14 recess 12. Recess 12 has side edges 13 and 14 and a back edge
15 15. Since most conventional nail clippers have a hole near the
16 joined ends of the nail clipper, a tab 16 will extend upwardly
17 from the bottom or floor 17 of recess 12 and pass through the
18 hole 18 in nail clippers 11.

19 The nail clippers 11 are preferably conventional nail
20 clippers. Such clippers have an upper arm 19 and a lower arm 20.
21 These arms are joined at joined ends 21 typically by a rivet not

1 shown. As is well known, these arms are joined in a way so that
2 an upper blade 22 and a lower blade 23 are spaced apart at the
3 blade end 24 of the nail clippers are spaced apart. An
4 operating lever 25 moves the upper arm downwardly so that upper
5 blade 22 and lower blade 23 contact one another, thereby cutting
6 a finger nail which has been inserted between them.

7 The handle 27 is useful as part of the assembly of the
8 present invention for several reasons. First of all, it makes it
9 much easier to hold nail clippers 11. This is especially useful
10 when trying to cut an infant's finger nails where positioning of
11 the nail clipper is critical. Handle 27 also can function to
12 support a light source 26, such as a light bulb or LED and a
13 battery 28, as well as associated wiring and a switch 29. Handle
14 27 has a hand graspable portion 30 which is large enough to
15 support a user's fingers on one side and palm on the other side.
16 This frees the user's thumb for operation of operating lever 25
17 in a very comfortable manner. The hand graspable handle 30
18 preferably extends upwardly as shown at reference character 41 in
19 Figure 2. Handle 30 is preferably injection molded and has
20 provisions for opening for replacement of the battery or
21 bulb/LED.

22 Figure 3 shows a user holding the handle 27 with the user's
23 right hand 52 and holding a subject's finger 53 with the user's

1 left hand 54. The subject's finger nail 33 is positioned with
2 the aid of guides 37 and 38.

3 An important feature of the present invention is the
4 presence of light source 26. Light source 26 performs a very
5 different function from the light sources shown in U.S. Patent
6 No. 6,553,592 and 6,220,251. That is, the light source 26 is
7 placed close enough to the finger tip to illuminate the inner
8 portion of the finger tip so that it glows with an orange glow
9 causing the nail ledge to appear dark in color. Most everyone is
10 familiar with the effect of placing a flashlight under the palm
11 of one's hand at night and turning it on. This causes one's hand
12 to glow orange. This same effect is accomplished by light source
13 26 if it is placed near or touching the tip 31 of finger 32. By
14 the term "near" it is intended to mean a small fraction of an
15 inch such as $\frac{1}{8}$ of an inch or less. The finger nail is indicated
16 by reference character 33 in Figure 5 and that portion of the
17 finger nail which extends beyond the subject's finger is
18 indicated by reference character 34. When the light source is
19 placed to cause the finger tip to glow orange, the intersection
20 35 between that portion of the finger nail 33 over the subject's
21 finger and the extending part of the nail 34 appears much darker
22 and is highly visible. Therefore, the finger nails can be easily
23 and precisely cut in dim light or even in darkness. Light source

1 26 guides the nail clippers to an appropriate position over the
2 finger nail and once in position, lights the inner portion of the
3 finger tip to facilitate the positioning of the cutting line 36
4 between upper blade 22 and lower blade 23.

5 When used to cut the finger nails of an infant or toddler,
6 the device of the present invention, when using a light source
7 near the finger tip, permits the caregiver to cut the infant's or
8 toddler's finger nails at night in dimly lit conditions while the
9 infant or toddler is sleeping without the necessity of turning on
10 the room light or providing any other source of external light.
11 While the above discussion has used the word "finger," it is to
12 be understood that the device can equally be used on toenails.

13 Another important feature of the present invention is the
14 presence of finger nail guides 37 and 38. These guides have
15 under surfaces 39 and 40, as shown in Figure 4, which are aligned
16 slightly below the lower edge of upper blade 23. In this way, as
17 shown best in Figure 3, a subject's finger nail can be brought
18 upwardly until it contacts the under surfaces 39 and 40 and then
19 moved inwardly toward the cutting edges until the clipper is in a
20 desired position. Preferably, the finger nail guides 37 and 38
21 are separated so that most of the extending part 34 of the finger
22 nail is visible.

1 The orientation of the light source 26 is not critical as
2 long as it causes the finger tip to glow orange in subdued light.
3 It may be aligned outwardly from the tip of the finger shown in
4 Figure 5 or positioned at an angle as shown in Figure 5A. It
5 could also be placed under the finger as shown in Figure 5B. It
6 is easy to determine in subdued light whether light placement
7 causes the finger to glow orange or simply lights the external
8 part of the finger. It is generally preferable that the light be
9 below the level of the finger nail.

10 An alternate embodiment of the nail clipping assembly is
11 shown in Figure 7 and indicated by reference character 42. This
12 embodiment has a handle 43 including a wafer battery 44 enclosure
13 45 and a switch 46. A bulb or LED 47 is covered with a lens 48.
14 The nail clippers 49 include a finger rest 50 on operating lever
15 51. Bulb 47 is aimed toward a finger tip at a 45° angle.

16 While the device has been shown and described with the
17 presence of a light, the hand graspable handle itself is useful
18 even if the light is not turned on or not used. The ease with
19 which the nail clippers can be positioned is greatly enhanced by
20 handle 26.

21 The present embodiments of this invention are thus to be
22 considered in all respects as illustrative and not restrictive;
23 the scope of the invention being indicated by the appended claims

1 rather than by the foregoing description. All changes which come
2 within the meaning and range of equivalency of the claims are
3 intended to be embraced therein.